

The following table lists the supported hardware and software components for using the Web-based MAP system.



Important! Due to incompatibilities in hardware and software from third-party vendors, NWEA plans to support PowerPC® processors only until July 2012.

In most cases, the requirements are the same for both the MAP Administration and Reporting Center (MARC) and the MAP Student Testing Center (MSTC). Any differences are noted below.

Category	PC Requirements	Macintosh® Requirements
Computer hardware*		
Screen resolution	1024 x 768 minimum	1024 x 768 minimum
Color depth	16-bit (32-bit recommended)	16-bit (32-bit recommended)
Peripherals	Keyboard and mouse Headphones for MAP for Primary Grades (MPG) testing	Keyboard and mouse Headphones for MPG testing
Operating systems and software		
Operating system	Microsoft® Windows XP® with Service Pack 3, Windows Vista®, or Windows® 7	Mac OS® X v10.5, v10.6, or v10.7
Browser for MARC†	Internet Explorer® 7, 8, or 9# or Firefox® 8‡	Safari® 4, 5, or 5.1§ or Firefox 8
Browser for MSTC	MAP lockdown browser** for PC with Internet Explorer 7, 8, or 9	MAP lockdown browser** for Mac® with Safari 4, 5, or 5.1§
Multi-media player	Adobe® Flash® Player 10.2 or higher	Adobe Flash Player 10.2 or higher (10.1 for PowerPC® processors)
Reports viewer for MARC	PDF viewer, such as Adobe Reader®	PDF viewer, such as Adobe Reader

*Computer hardware components, such as the processor and RAM, must meet the requirements to run the software listed above. Specifically, verify that the hardware meets the operating system and Adobe Flash Player requirements listed on the Web sites of the respective software vendors.

†MARC requires specific browser settings, such as allowing cookies and pop-ups for the MAP URL. For details, see the *System Administration Guide*.

#Any Internet Explorer 9 issues with finding saved testing sessions may be resolved by enabling Compatibility View.

‡Windows Vista was not tested with Firefox 8.

§OS X v10.6 was not tested with Safari 5.1. OS X v10.7 was not tested with Safari 4 or 5. PowerPC processors were not tested with Safari 4.

**The MAP system requires a MAP lockdown browser for all testing. The lockdown browser reduces distractions to students during testing by restricting access to other applications and Web sites.

Bandwidth Availability

The key bandwidth requirement is available Internet bandwidth sufficient for adequate system performance during student testing.

The most important bandwidth considerations are:

- Number of computers available for concurrent tests
- Number of students taking MAP for Primary Grades (MPG) tests during the scheduled test window
Note: MPG tests require the most bandwidth.
- Bandwidth available through your main Internet connection
- Bandwidth available through any limitation points in your internal network (such as school-to-district connections when the district has the main Internet connection)

The following table can help you determine the approximate bandwidth to allocate based on the number of concurrent testers in your organization.

Students Testing Concurrently	Average Available Bandwidth Required*	
	MAP Tests	MPG Tests†
50	0.15 Mbps	0.9 Mbps
100	0.3 Mbps	1.8 Mbps
250	0.75 Mbps	4.5 Mbps
500	1.5 Mbps	9 Mbps
1000	3 Mbps	18 Mbps

*The table identifies the average bandwidth in Megabits per second (Mbps) required to provide adequate performance and avoid system time-outs during the question-and-answer portion of student tests.

†MPG tests require more bandwidth because they include audio support and additional interactive features for young students. Since the grades taking MPG versus MAP tests may vary from term to term, the bandwidth requirements may likewise vary.

Additional bandwidth is needed at the beginning of each test to load the initial test questions and the question display software into cache in each computer's browser. The initial load is approximately 2.2 MB, and the load time varies based on available bandwidth. As an example, with available bandwidth of 0.6 Mbps for a single student, the initial load would take about 30 seconds.

To perform an Internet speed test, use a Web site such as www.speedtest.net and select Portland, Oregon as the location. Perform the test multiple times from each location where testing will take place, such as each school building. Test the speed at different times during the school day to understand the variations in bandwidth availability based on staff and student usage. Record the download speeds and use them to approximate your available bandwidth during testing.

The bandwidth requirements listed in this section are subject to change. In addition, the bandwidth you need may vary from one term to the next, and from year to year, based on your testing plans.